

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of

Confirmation No. 8767

WARMERDAM et al.

Atty. Ref.: 4662-371

Appln. No. 10/516,663

T.C. / Art Unit: 1794

Filed: November 30, 2004

Examiner: L.A. Wong

FOR: METHOD FOR THE TREATMENT OF SHREDDED CHEESE WITH A POLYENE  
ANTIFUNGAL COMPOUND

\* \* \*

**APPEAL BRIEF UNDER 37 CFR § 41.37**

April 23, 2009

**Mail Stop Appeal Brief – Patents**

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Sir:

Appellants submit this Brief to appeal the Examiner's rejection as set forth in her Office Action mailed November 21, 2008 (the "Office Action"), which rejected the claims for a third time. The fee required under 37 CFR § 41.20(b)(2) is submitted herewith.

The Notice of Appeal was filed on April 21, 2009. This Brief is timely filed.

Reversal of the Examiner's rejection of claims 1-18 by the Board of Patent Appeals and Interferences (the "Board") is respectfully requested.

**35 REAL PARTY IN INTEREST**

The assignee, DSM IP ASSETS B.V., holds all rights in the subject invention, as well as the invention disclosed and claimed therein, by the assignment recorded on

November 30, 2004 in the Patent and Trademark Office (PTO) starting at reel 016351 and frame 0856.

**35 RELATED APPEALS AND INTERFERENCES**

Appellants, their assignee, and the undersigned do not know of any prior or pending appeal, interference, or judicial proceeding which is related to, directly affects or is directly affected by, or has a bearing on the Board's decision in this appeal.

**35 STATUS OF CLAIMS**

Claims 1-18 stand rejected. They are at issue in this appeal and listed in the Claims Appendix.

Claims 19-23 were canceled without prejudice or disclaimer.

**IV. STATUS OF AMENDMENTS**

The amendment filed subsequent to the final Office Action mailed April 28, 2008 was denied entry. Therefore, a Request for Continued Examination was filed September 11, 2008 to enter the amendments as a matter of right. The Office Action containing the rejection being appealed was then mailed. No subsequent amendments were filed.

**35 SUMMARY OF CLAIMED SUBJECT MATTER**

Independent claim 1 is directed to a process in which an aqueous composition comprising natamycin and a thickening agent is sprayed with nozzles onto a mixture of anticaking agent and shredded cheese, wherein the natamycin is dispersed in the

aqueous composition and the thickening agent prevents clogging of the nozzles during spraying. The claimed invention is supported by page 2, lines 5-14; page 3, line 6; page 3, lines 11-15; page 3, line 20; page 4, lines 7-9; page 4, lines 13-14; page 4, line 19; and the Example at page 5, line 28, to page 6, line 4, of the specification. See also original claims 1 to 4.

Independent claim 9 is directed to a method for preventing nozzle clogging in which an aqueous composition comprising natamycin and a thickening agent is sprayed with nozzles onto shredded cheese, wherein the natamycin is dispersed in the aqueous composition and the thickening agent prevents clogging of the nozzles during spraying. The claimed invention is supported by page 3, line 6; page 3, lines 11-15; page 3, line 20; and page 4, line 19; of the specification. See also original claims 1 and 2.

Therefore, the invention as presently claimed is clearly supported by Appellants' disclosure as originally filed.

### **35      GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

Under 35 U.S.C. 103(a), was it proper to reject claims 1-18 as allegedly being unpatentable?

## **VII.    ARGUMENTS**

### *35 U.S.C. 103 – Nonobviousness*

A claimed invention is unpatentable if the differences between it and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art. *In re Kahn*, 78 USPQ2d

1329, 1334 (Fed. Cir. 2006) citing *Graham v. John Deere*, 148 USPQ 459 (1966). The *Graham* analysis needs to be made explicitly. *KSR v. Teleflex*, 82 USPQ2d 1385, 1396 (2007). It requires findings of fact and a rational basis for combining the prior art disclosures to produce the claimed invention. See *id.* (“Often, it will be necessary for a court to look to interrelated teachings of multiple patents . . . and the background knowledge possessed by a person having ordinary skill in the art, all in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue”). The use of hindsight reasoning is impermissible. See *id.* At 1397 (“A factfinder should be aware, of course, of the distortion caused by hindsight bias and must be cautious of arguments reliant upon *ex post* reasoning”). Thus, a *prima facie* case of obviousness requires “some rationale, articulation, or reasoned basis to explain why the conclusion of obviousness is correct.” *Kahn* at 1335; see *KSR* at 1396. An inquiry should be made as to “whether the improvement is more than the predictable use of prior art elements according to their established functions.” *Id.* At 1396. But a claim which is directed to a combination of prior art elements “is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art.” *Id.* At 1396. Finally, a determination of *prima facie* obviousness requires a reasonable expectation of success. See *In re Rinehart*, 189 USPQ 143, 148 (C.C.P.A. 1976).

Claims 1-18 were rejected under Section 103(a) as allegedly being unpatentable over the Suloff thesis, Isom et al. (EP 1,174,039) and Ang (EP 1,068,809) in view of Noordam et al. (US 5,552,151), De Haan et al. (EP 867,124), and Schuppiser et al. (US 5,446,014). Appellants traverse because their claimed invention is directed to solving

the problem of nozzle clogging when shredded cheese is sprayed by adding thickening agent in the aqueous composition containing natamycin. The prior art teaches away from the invention and does not establish a reasonable expectation of its success.

In accordance with Appellants' invention, the presence of a thickening agent in an aqueous composition containing natamycin prevents nozzle clogging, which otherwise occurs when spraying shredded cheese with the aqueous composition lacking the thickening agent. There is no evidence of record that the presence of a thickening agent in the aqueous composition containing natamycin would have this effect. Instead, Suloff solved the problem by using chemical derivatives of natamycin which do not clog the nozzle. The natamycin derivatives are soluble in an aqueous composition whereas natamycin is dispersed in the aqueous composition according to Appellants' claims. Suloff teaches away from using a dispersion of natamycin and adding thickening agent.

Isom added a nutritional supplement comprising calcium sulfate dehydrate to the shredded cheese. Use of this supplement reduced the amount of anti-caking agents commonly present in shredded cheese at high levels (see column 2, lines 36-41). Isom disclosed that natamycin can also be added to shredded cheese. The use of thickening agents, however, to prevent nozzle clogging during spraying of an aqueous composition containing natamycin is neither taught nor made obvious by Isom. No thickening agent was used Isom.

Ang relates to increasing the bioavailability of natamycin (see page 2, paragraph [0008]). It solved the clogging problem by reducing the average particle size of natamycin to below 10 microns (see page 3, paragraphs [0017] and [0018]). It disclosed that the natamycin can be added to the shredded cheese by dry mixing instead of spraying.

The use of a thickening agent, however, to prevent nozzle clogging during spraying of an aqueous composition containing natamycin is neither taught nor made obvious by Ang. Instead, its only solutions to the clogging problem were reducing the particle size of natamycin and avoiding spraying all together. Therefore, Ang teaches away from being combined with the other cited documents because it would have been simpler to add natamycin to shredded cheese by dry mixing at the same time the anti-caking agent was added, in contrast to spraying the natamycin separate from mixing with the anti-caking agent (see especially claim 1). One of ordinary skill in the art would not have relied on Ang to render obvious Appellants' claimed invention, which requires the separate addition of anti-caking agent and natamycin to the shredded cheese.

Noordam combined natamycin and a thickening agent (e.g., xanthan) to stabilize a concentrated suspension. Using the thickening agent, however, to prevent nozzle clogging during the spraying of an aqueous composition containing natamycin is not taught or made obvious by Noordam. De Haan is directed to an aqueous composition containing natamycin and xanthan gum. But prevention of nozzle clogging when spraying an aqueous composition containing natamycin is never addressed.

Schuppiser relates to the problem of nozzle clogging of aqueous formulations of quaternary ammonium hydroxides and xanthan gum due to the formation of insoluble fibers (see column 1, lines 53-61). But quaternary ammonium compounds are structurally different from polyene antifungal antibiotics like natamycin. They also have different chemical properties. There is also no evidence of record establishing that quaternary ammonium hydroxides could have been replaced by natamycin with a reasonable expectation of success. On the contrary, one of ordinary skill in the art would have had

serious doubts as to whether Schuppiser's methods would be applicable to an aqueous composition containing natamycin because of structural and chemical differences therebetween. Appellants submit that the Examiner's arguments to the contrary are based on hindsight reconstruction of their invention which is prohibited in analysis of obviousness.

To summarize, the primary documents relied upon in the Examiner's rejection do not teach or render obvious Appellants' solution to preventing nozzle clogging when natamycin is sprayed on shredded cheese. Appellants' solution of dispersing natamycin in an aqueous composition with thickening agent is specifically recited in the present claims 1 and 9. Suloff taught that the chemical structure of natamycin should be changed. Ang taught that the particle size of natamycin should be reduced or it should be mixed with the shredded cheese instead of sprayed. Isom, Noordam, and de Haan have nothing to say (at all) about solving the problem of nozzle clogging. Moreover, Schuppiser does not render Appellants' claimed invention obvious because natamycin would not have replaced quaternary ammonium hydroxides with a reasonable expectation of success.

Therefore, the documents cited in this rejection, alone or in combination, do not render obvious including a thickening agent in an aqueous composition containing natamycin to prevent nozzle clogging. On the contrary, the cited documents suggest that the problem of nozzle clogging can be solved by changing natamycin's chemical structure or reducing its particle size. No reason was provided in the Office Action for substituting these clear teachings on how to prevent clogging (i.e., changing natamycin's chemical structure or reducing its particle size) with the Examiner's hindsight reconstruction of Appellants' invention (see claims 1 and 9). Further, the combined documents do not

render obvious separately adding to shredded cheese (i) anti-caking agent by mixing and (ii) natamycin by spraying (see especially claim 1). Combining the cited documents creates irreconcilable conflicts between their teachings instead of establishing a *prima facie* case of obviousness.

Further, separating the mixing of an anti-caking agent with shredded cheese from the spraying of shredded cheese with an aqueous composition containing natamycin is not addressed, nor does it appear to have been contemplated. In particular, Ang taught away from this express limitation of claim 1 by the suggestion that both anti-caking agent and natamycin could be mixed with the shredded cheese at the same time.

Suloff should not have been combined with the other documents in this rejection because it taught away from adding a thickening agent to an aqueous composition containing natamycin. Colloidal dispersion complexes were discussed negatively on pages 6-7. The aqueous insolubility of polyene macrolide antibiotics was caused by their intramolecular aggregation. Natamycin is a polyene macrolide antibiotic. Even use of a detergent did not solubilize the antibiotic in an aqueous composition. Suloff's natamycin derivatives, however, are soluble in water. The natamycin derivatives do not form colloidal dispersion complexes. Therefore, Suloff teaches away from being combined with the other cited documents if the combination would result in a dispersion of natamycin (e.g., suspension or emulsion) in the aqueous composition. One of ordinary skill in the art would not have cited Suloff to render obvious the claimed invention, which requires a dispersion as presently claimed (see claims 1 and 9).

Moreover, since the composition will be sprayed, one of ordinary skill in the art would not have found it obvious to add a thickening agent to an aqueous composition



that is sprayed. It was known in the art that inclusion of a thickening agent increases the risk that the composition forms a gel and exacerbates the problem of nozzle clogging. In evidence thereof, US 5,714,135 was submitted for the Examiner's consideration and made of record in the initialed Form PTO-1449 mailed November 21, 2008. The '135 patent states,

Clogging of nozzle orifices is a perennial problem. Most often clogging is encountered with relatively viscous formulations, frequently the result of thickeners settling within the exit orifices

(column 1, lines 17-22). Therefore, one of ordinary skill in the art would not have added a thickening agent to an aqueous composition containing natamycin at the time the invention was made to prevent clogging (see claims 1 and 9).

A legal conclusion of obviousness is based on four factual findings: (1) the scope and content of the prior art; (2) the differences between the prior art and the claims; (3) the level of ordinary skill in the art; and (4) objective evidence of nonobviousness. Here, the Examiner failed to make all of these factual determinations. Further, in determining the differences between the prior art and the claims, the Examiner must show that the claimed invention "as a whole" would have been obvious. *Schenck v. Nortron*, 218 USPQ 698 (Fed. Cir. 1983); *Stratoflex v. Aeroquip*, 218 USPQ 871 (Fed. Cir. 1983). Distilling an invention down to the "gist" or "thrust" of an invention disregards the requirement of analyzing the subject matter as a whole. *W.L. Gore & Associates v. Garlock*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983) (disregarding certain express claim limitations resulted in treating claims as though they read differently than allowed). The Examiner has not analyzed the claimed subject matter as a whole by ignoring the failure of the prior art to teach or make obvious Appellants' solution to nozzle clogging.

For the reasons provided above, the combination of cited documents does not render obvious Appellants' claimed invention. See independent claims 1 and 9. Moreover, claims depending from the independent claims are also rendered obvious since the limitations of claim 1 or 9 are incorporated in the dependent claims. M.P.E.P. § 2143.03 citing *In re Fine*, 5 USPQ2d 1596 (Fed. Cir. 1988).

Appellants urge the Board to reverse the Section 103 rejection because the claimed invention would not have been obvious to one of ordinary skill in the art at the time it was made.

*Conclusion*

For the reasons discussed above, the Examiner's rejection is improper and it should be reversed by the Board. Appellants submit that their pending claims are in condition for allowance and earnestly solicit an early Notice to that effect.

Respectfully submitted,

**NIXON & VANDERHYE P.C.**

By:                     /Gary R. Tanigawa/                      
Gary R. Tanigawa  
Reg. No. 43,180

901 North Glebe Road, 11th Floor  
Arlington, VA 22203-1808  
Telephone: (703) 816-4000  
Facsimile: (703) 816-4100

## VIII. CLAIMS APPENDIX

1. (previously presented) A method for preparing shredded cheese, the method comprising:
  - (a) shredding cheese;
  - (b) conveying the shredded cheese to a revolving tumbler;
  - (c) adding an anticaking agent to mix with the shredded cheese in the tumbler;
  - (d) spraying an aqueous composition comprising natamycin and a thickening agent with spray nozzles onto the mixture of anticaking agent and shredded cheese in the tumbler, wherein the natamycin is dispersed in the aqueous composition and the thickening agent prevents clogging of the nozzles during spraying; and
  - (e) transporting the shredded cheese from the tumbler to filling equipment.
2. (previously presented) The method of claim 1, wherein the thickening agent is a gum.
3. (previously presented) The method of claim 2, wherein the gum is a xanthan gum, a gellan gum, or a combination thereof.
4. (previously presented) The method of claim 1, wherein the concentration of natamycin in the aqueous composition is from 0.1 to 20 grams/liter.
5. (previously presented) The method of claim 1, wherein the concentration of the thickening agent in the aqueous composition is from 0.5 to 50 grams/liter.

6. (previously presented) The method of claim 1, wherein the anticaking agent is selected from the group consisting of microcrystalline or powdered cellulose, starch, modified starch, sodium silicate, magnesium silicate, potassium silicate, zinc silicate, silicon dioxide, kaolin, talc, potassium carbonate, magnesium carbonate, sodium phosphates, potassium phosphates, and calcium phosphates.
7. (previously presented) The method of claim 1, wherein the aqueous composition is sprayed onto the mixture of anticaking agent and shredded cheese in an amount between 0.01% and 5% (v/w).
8. (previously presented) The method of claim 1, wherein the natamycin is sprayed onto the mixture of anticaking agent and shredded cheese in a final concentration between 2 and 40 ppm.
9. (previously presented) A method for preventing nozzle clogging during treatment of shredded cheese, the method comprising: spraying an aqueous composition comprising natamycin and a thickening agent with spray nozzles onto shredded cheese, wherein the natamycin is dispersed in the aqueous composition and the thickening agent prevents clogging of the nozzles during spraying.
10. (previously presented) The method of claim 9, wherein the thickening agent is a gum.

11. (previously presented) The method of claim 10, wherein the gum is a xanthan gum, a gellan gum, or a combination thereof.

12. (previously presented) The method of claim 9, wherein the concentration of natamycin in the aqueous composition is from 0.1 to 20 grams/liter.

13. (previously presented) The method of claim 9, wherein the concentration of the thickening agent in the aqueous composition is from 0.5 to 50 grams/liter.

14. (previously presented) The method of claim 9, wherein the method further comprises adding a dry powder composition comprising an anticaking agent to the shredded cheese.

15. (previously presented) The method of claim 14, wherein the dry powder composition is added to the shredded cheese before the shredded cheese is sprayed with the aqueous composition.

16. (previously presented) The method of claim 14, wherein the anticaking agent is selected from the group consisting of microcrystalline or powdered cellulose, starch, modified starch, sodium silicate, magnesium silicate, potassium silicate, zinc silicate, silicon dioxide, kaolin, talc, potassium carbonate, magnesium carbonate, sodium phosphates, potassium phosphates, and calcium phosphates.

17. (previously presented) The method of claim 9, wherein the aqueous composition is sprayed onto the shredded cheese in an amount between 0.01% and 5% (v/w).

18. (previously presented) The method of claim 9, wherein the natamycin is sprayed onto the shredded cheese in a final concentration between 2 and 40 ppm.

Claims 19-23 (canceled)

## IX. EVIDENCE APPENDIX

US 5,714,135 was made of record in Form PTO-1449 returned with the Office Action mailed November 21, 2008.

### 1

#### HAIR TREATMENT COMPOSITION

##### BACKGROUND OF THE INVENTION

###### 1. Field of the Invention

The invention relates to a hair styling composition, especially a sprayable gel dispensed through a pump mechanism.

###### 2. The Related Art

Hairsprays are products containing a film-forming resin which when applied to hair helps to hold the hair in place. Resins can be sprayed onto the hair utilizing different types of dispensers. Two of the most popular are the mechanical air driven pump container and the aerosol canister, the latter employing a volatile propellant to discharge product. Both types of dispensers include a spray nozzle through which product is sprayed.

Clogging of nozzle orifices is a perennial problem. Most often clogging is encountered with relatively viscous formulations, frequently the result of thickeners settling within the exit orifices. Carbomers which are the thickeners of choice in commercial products have especially been linked to plugging of orifices.

U.S. Pat. No. 4,983,377 (Murphy et al.) describes the use of silicone gums as highly effective conditioning and style retention aids. However, materials of this type may have deficiencies with respect to clogging. Improved materials are therefore necessary which can combine thickening, conditioning and style retention while still allowing for good sprayability.

Accordingly, it is an object of the present invention to provide a hair treatment composition suitable for dispensing through a pump without causing clogging of nozzles.

Another object of the present invention is to provide a hair treatment composition suitable for dispensing through a pump that not only provides excellent spray characteristics but also delivers excellent sensory properties.

Still another object of the present invention is to provide a hair treatment composition in the form of a clear gel with the properties of good sprayability, good styling and minimal tackiness.

These and other objects of the present invention will become more apparent from the detailed description which follows.

**X. RELATED PROCEEDINGS APPENDIX**

None.